Directions

1. There are 29 short answer questions worth 3 points each and essay questions worth a total of 15 points. All answers to the first 29 questions should be placed on the answer sheet attached to the end of the exam. No credit will be given for answers placed elsewhere. For the essay questions, put your answers in the space provided beneath each question.

2. A calculator is allowed.

3. You have the entire class period to finish the exam. However, no additional time will be allowed.
To answer the next 5 questions, suppose there is a small island economy with 100 Americans and 50 Canadians. In a given day, an American can produce either 40 beaded necklaces or 2 rugs. A Canadian can produce either 30 beaded necklaces or 1 rug.

1) Who has the comparative advantage in rug production?

2) Draw the PPF for this economy. Be sure to label the axes and indicate the numeric value of the vertical intercept, the horizontal intercept, and the value at which the "kink" in the PPF occurs.

3) If the economy produces 2000 necklaces, what is the maximum number of rugs it can produce in a day?

4) A combination of 300 rugs and 2000 necklaces:
   a. technologically efficient.
   b. technologically inefficient.
   c. unattainable without additional resources or better technology.
5) Suppose that the price of gasoline rises and at the same time the quantity of gasoline sold falls. Which of the following would be most likely to explain this combination of events?
   a. An increase in the cost of producing gasoline.
   b. A decrease in the cost of producing gasoline.
   c. An increase in the demand for SUVs which are known to be gas guzzlers.
   d. A decrease in the demand for SUVs which are known to be gas guzzlers.

6) Suppose that the equilibrium price of milk is $1.50 per gallon. Which of the following statements would be true?
   a. a price ceiling of $1.75 would create a shortage of milk.
   b. a price ceiling of $1.25 would create a surplus of milk.
   c. a price floor of $1.75 would create a surplus of milk.
   d. a price floor of $1.25 would create a shortage of milk.

7) Suppose that the city of Oxford imposes a rent ceiling that prohibits landlords from increasing rents above what was charged in the year 2000. The rent ceiling does not, however, apply to on-campus dormitory rents. This rent ceiling would imply that:
   a. any increase in on-campus dormitory rents would likely lead to a shortage of off-campus housing.
   b. any decrease in on-campus dormitory rents would likely lead to a surplus of off-campus housing.
   c. any increase in the supply of off-campus housing would likely lead to a surplus of off-campus housing.
   d. all of the above.

8) Which of the following would lead to an increase in the equilibrium price and a decrease in the equilibrium quantity of beef?
   a. an increase in demand for pork, which are substitutes in production for beef.
   b. an increase in demand for leather, which is a complement in production to beef.
   c. an increase in consumer income assuming that beef is a normal good.
   d. a decrease in consumer income assuming that beef is a normal good.
9) If the price elasticity of demand for gasoline is .4, a 10 percent increase in the price of gasoline would cause consumers to buy ______ percent less gasoline.

10) If the price elasticity of demand for gasoline is .4, a 10 percent increase in the price of gasoline would cause total revenue from gasoline sales to (fall, rise) by ______ percent.

11) The elasticity of demand for a product will generally be (greater, lesser) if there are fewer substitutes available for the product and will be (greater, lesser) if people spend a large fraction of their income on the product.
   a. greater; lesser.
   b. greater; greater.
   c. lesser; lesser.
   d. lesser; greater.

12) If the cross-elasticity of demand between two products is a large negative number, it would be safe to conclude that the two products are:
   a. good substitutes in consumption for each other.
   b. substitutes in production for each other.
   c. good complements in consumption for each other.
   d. good complements in production for each other.
To answer the next 4 questions, consider the following hypothetical supply and demand curves for internet services.

13) What is the elasticity of demand for internet services over the price range of $20 to $22 per month? (round your answer to the nearest one-tenth, e.g. 4.1)

14) At the equilibrium price of $18 per month, what is the dollar value of consumer's surplus? (note how that quantity is measured in millions of customers).

15) At the equilibrium price of $18 per month, what is the dollar value of producer's surplus? (note that quantity is measured in millions of customers).

Suppose there are no positive or negative externalities associated with internet services and the government imposes a price ceiling of $16 per month.

16) Compared to the equilibrium price of $18 per month, with the $16 price ceiling consumers would be (better off, worse off) by $________.

17) Compared to the equilibrium price of $18 per month, with the $16 price ceiling producers would be (better off, worse off) by $_________.

18) With the price ceiling of $16 per month, there would be a deadweight loss of $_______.
Suppose that there is no price ceiling but the government imposes a quota that prohibits more than 20 million customers. Using the same telephone market as in the earlier questions (represented below), answer the next 3 questions.

19) With the quota, the price per month would be $____.

20) The quota would cause consumers to be (better, worse) off by $______.

21) The quota would make producers (better, worse) off by $______.
Suppose that the government taxes internet services and the supply curve shifts from S0 to S1 in the diagram below.

\[ \text{price per month in$} \]

\[ \text{millions of customers} \]

\( S0 \)

\( S1 \)

\( D \)

**NOTE THAT QUANTITY IS MEASURED IN MILLIONS.**

22) The tax per customer is $_______.

23) The tax revenue generated by the tax is $__________.

24) The excess burden of the this tax is $______.

25) If the supply curve were more inelastic than the one depicted in the above diagram, the revenue generated from this tax increase would be (greater, lesser) and the tax hike would hurt producers (more, less).
   a. greater; lesser.
   b. greater; more.
   c. lesser; more.
   d. lesser; less.
To answer the next 4 questions, consider the diagram below illustrating the benefits and costs of flu shots.

![Diagram showing price per flu shot (in $) on the y-axis and millions of flu shots on the x-axis. The diagram includes lines labeled PMC=SMC, SMB, and PMB, with points indicating 80 and 100 million flu shots.]

26) There is a (positive, negative) externality of $_____ for each flu shot.

27) If the market is not subsidized or taxed, at the market outcome, the benefit to society of one more flu shot would be $_____ and the cost to society of one more flu shot would be $_____.

28) To push the market to the socially efficient output, the government could implement a (tax, subsidy) of $_____ per flu shot.

29) If the market is pushed from the market outcome to the socially efficient outcome, benefits to society would increase by $_______ (more, less) than costs to society.
1. In the U.S., the federal government has established a peanut quota system. According to a report by Citizens Against Government Waste (www.cagw.org) “Only farmers who own or lease a production quota can legally grow peanuts to be sold for edible use.” In 1998, for example, farmers were allowed to grow only 1.2 million tons of peanuts. The CAGW also cites a study by the General Accounting Office indicating that consumers spend an additional $513 million a year for peanut products such as peanut butter and kung pao chicken.

a. (3 pts) Draw a supply and demand curve for peanuts in the U.S. On the diagram, demonstrate the effect of imposing the 1998 quota of 1.2 million tons of peanuts.

The quota causes the supply curve to become vertical at 1.2 m and the price rises from P0 to P1.

b. (3 pts) Refer to your diagram to explain how the GAO could estimate how much the quota system costs consumers.

The quota system reduces consumers surplus by the area P1ABP0. This represents the increase in the price of peanuts due to the quota times the average of the new quantity (1.2m) and the old quantity (Q0).
2. (3 points) In the article about gasoline prices posted on the class web site, a gasoline station owner is quoted as follows:

“Honestly, it makes no sense to me,” Capron said, reserving some scorn for the more than 40 cents a gallon that goes into the government’s tax coffers. “If I told you that your tax on groceries was that high, you’d probably take a Louisville slugger down to the legislature.”

Given what you have learned about social efficiency and taxes, why does it make sense to tax gas at a higher rate than groceries? (No graphs are necessary. Describe why social efficiency considerations would lead policy makers to tax gas at a higher rate than groceries. Be sure to use the relevant economic terminology in your answer).

In terms of social efficiency, it is important that the market be driven to the point where SMB=SMC. With the consumption of gasoline, there are negative externalities such as pollution and road damage and the market would produce beyond the point where SMB=SMC. To correct the “overproduction” of gasoline, it makes sense to tax it. With groceries, it is difficult to imagine any negative externalities and the market will tend to produce the efficient amount without government intervention.

3. (3 points). Cigarette taxes have increased substantially in recent years and are likely to rise further in the future. In one sentence, explain why higher cigarette taxes may eventually lead to less tax revenue from cigarettes. No graphs are necessary.

Higher cigarette taxes will reduce the supply of cigarettes, drive up their price and reduce the quantity of cigarettes that can be taxed.

4. (3 points) In the article about “dynamic pricing” at Amazon.com, it was pointed out that Coca-Cola had tried a similar experiment but it wasn’t with the internet. In one sentence, what did Coca-Cola do?

Coca-cola designed a pop machine that would increase the price of pop when outside temperatures increased.
1. American
2. graph at right
3. 175
4. C
5. A
6. C
7. A
8. A
9. 4
10. Rise 6
11. D
12. C
13. 7.0
14. $180 million
15. $180 million
16. better off, $60 million
17. worse off, $100 million
18. $40 million
19. $22
20. $160M worse off
21. $0
22. 4
23. $160 million
24. $40 million
25. B
26. positive; $6
27. 14; 8
28. subsidy; $6
29. $60M; more